



Transportation

THE CHALLENGE

The continuing urbanization of our Southern California region makes it more difficult to make dramatic improvements to our transportation system. Rebuilding and expanding an existing transportation facility in a built out urban environment is expensive and often unpopular. When transit projects, new roads, or other travel options are unveiled, we see temporary improvements. However, those often disappear within months, replaced by a return to traffic and congestion, which generally seem to get worse as the years go by. In 2006, the State of the Region report card gave a failing grade of “F” to Southern California, noting that we continue to rank as the most congested metropolitan region in the nation.

Our transportation challenge is shared by other metropolitan regions throughout the world. Traffic congestion is largely a symptom of the growth patterns of our region. The decentralization of our region’s growth, combined with the sheer density of people, jobs, and cars makes it nearly impossible for our transportation system to keep pace. Indeed, a successful transportation plan in any growing region of the country is one that holds the line on traffic congestion. Most plans simply make future traffic “less worse” than if nothing were done altogether. However, even if we had limitless right-of-way and

funds to expand our roads to relieve congestion, the short- and long-term impacts to people (and communities), traffic congestion, and the environment would be unacceptable.

Indeed, the transportation system heavily influences environmental, economic, and quality of life issues both positively and negatively. An efficient transportation system minimizes impacts to our air quality, surface and underground water supplies, and helps accommodate growth that minimizes the economic costs of living our lives. An inefficient system directly affects nearly every area of the environment and has an indirect set of impacts by inducing growth in areas where our public infrastructure is inadequate.

The Regional Transportation Plan (RTP)¹ process is legally required to be financially constrained. While the lack of adequate funding constrains our ability to do more, the RCP acknowledges that more must be done beyond the conventional transportation planning process to reduce congestion and vehicle miles traveled and increase the mobility of people and goods around the region with minimal interference.

The Transportation Chapter is founded on the premise that we need to make profound changes in the way we travel today



HOW TRANSPORTATION POLICIES PRODUCE MULTIPLE BENEFITS

Land Use and Housing: Focusing transportation investments to serve critical centers for housing and jobs helps guide land use planning. In doing so, transportation investments can increase property values and demand for subsequent development, such as transit-oriented development.

Open Space and Habitat: Location choices for new or expanded transportation facilities can play a large role in the ability to maintain or limit impacts on existing natural lands.

Water: Promoting transportation projects that reduce urban sprawl can reduce surface water runoff contamination and maximize recharge of underground aquifers. Improved highway and roadway design can help mitigate transportation-related water quality problems.

While the RTP is legally required to be financially constrained, more

and radically alter the way we plan our transportation system tomorrow.

Our challenges to developing transportation policies that can achieve ambitious mobility goals can be broadly divided into three categories:

- addressing demand on our transportation system from growth in population, employment and households,
- preserving, wisely utilizing, and, when necessary, expanding our infrastructure, and
- funding.

Demand on Our Transportation System

Each major mode in our transportation system faces challenges in meeting the growth in that is anticipated for our region. If current population and employment trends continue as projected, regional daily traffic delay is expected to more than double to 3.6 million hours of daily delay by 2030, unless travelers change their travel behavior. Travel speeds on highways will become more unpredictable and average speeds will decrease substantially. In addition to conventional passenger surface transportation, there are two other major dynamics that will continue to grow over the next 25 years and pose major challenges for the region.

Crisis in Transporting Goods. The Southern California region is facing dramatic growth in rail and truck traffic. Almost all

of the short-haul and a significant share of medium- and long-haul movement of goods occur by truck. Severe congestion due to truck traffic is expected to worsen in the region's major transportation corridors like the I-710 and SR-60 freeways. The regional system is expected to see up to 216 percent more truck trips by 2035. Containerized trade volume is expected to triple to 42.5 million Twenty-Foot Equivalent Units (TEUs)² by 2030. These forecasts are capacity-constrained by the size of the ports and are significantly below anticipated demand, based on an increase of port terminal productivity from 4,700 TEUs per acre per year currently to over 10,000 TEUs per acre per year in the future. The ability of the ports to handle this unprecedented growth in containerized cargo volumes is critical to the continued health of the local, regional, and the national economy.

The challenge in addressing the growth of containerized cargo at the ports is compounded by traffic bottlenecks for trucks entering and leaving the port areas. Additionally, the region's intermodal rail yards are reaching capacity and causing delays in moving both international and domestic containers between rail and trucks. Our ability to accommodate the subsequent rail and truck distribution traffic will substantially influence whether we can achieve ambitious transportation goals.

Air Travel. The level of air passenger demand is forecast to double from the current regional level of 88 million annual passengers (MAP) before 2035. For every one million regional air passengers, it is estimated that there is a positive regional

must be done to reduce congestion from today's levels.

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economic impact of \$620 million (in 1998 dollars) and 4,475 jobs. In addition, the number of jobs created by air cargo and freight movement in the region is enormous and vital to the overall health of the regional economy. However, the increased traffic that will cross our region's roads and freeways to get to our eight commercial service airports must be addressed if we are to reduce congestion beyond current levels.

Preserving and Expanding Our Infrastructure

The region must get the most out of the current system. This is especially true for the State Highway System owned by CalTrans. Small physical improvements (e.g., auxiliary lanes that extend the merging range) and technology deployments (e.g., advanced ramp metering) offer us affordable solutions to restore some of the lost productivity due to increasing congestion. These technology deployments are often referred to as Intelligent Transportation Systems or ITS. The combination of investments reduces delays and the duration of congestion, and improves the predictability of travel time.

Every investment in our transportation system creates a long-term commitment to operate and maintain that infrastructure. Current estimates show that our region needs \$40 billion in order to maintain our current system. However, we have a funding shortfall of over \$26 billion, meaning that as most of our transportation infrastructure ages and there is less money for preservation and maintenance, it will ultimately cost more to restore or replace it.

In light of this inability to even maintain our existing system, the region must find ways to expand travel options for passenger and freight movement. Conventional multi-modal investments must be complemented with unconventional means of addressing transportation, including land use strategies, market-based initiatives, and other major, innovative programs if we are to reverse the trends toward increasing congestion and vehicle miles traveled.

Financial Needs

The SCAG region faces significant financial challenges to meet current transportation maintenance and operational needs for the RTP horizon, not to mention what is needed to further improve mobility and air quality in the region. Historical sources of funding such as gas taxes may be a decreasing source of revenue in light of potential shifts to other fuel sources. Public-private partnerships, user fees, and other sources of revenue must be explored if we are to find new ways to address current and future congestion.

THE PLAN

While the RCP calls for unprecedented goals and action, it is primarily an advisory document. The 2008 RTP comprises the constrained, or funded, foundation of any more ambitious long-term plan. The 2008 RTP relies on a number of strategies to achieve more modest, constrained goals. These include an increased focus on operational, management and preservation



HOW TRANSPORTATION POLICIES PRODUCE MULTIPLE BENEFITS

Energy: The transition of the vehicle fleet to non-petroleum-based energy sources will have profound changes in overall energy demand. The impact of potential shifts to electric-powered sources of transportation on power plants must be addressed.

Air Quality: On-road mobile sources make up 40% and 57% of our region's smog-forming ROG and NO_x emissions, and 77% of carbon monoxide emissions. Transition of passenger and freight vehicle fleets to cleaner fuels is an important strategy in the region's efforts to achieve clean air standards and reduce localized hotspots of toxic air pollutants.

Economy: Improved mobility has a profound impact on the economy as traffic delays time and associated additional fuel costs are distributed throughout the economy, particularly as it impacts the movement of goods.

Our region needs to do more now to plan for the unprecedented growth

strategies; land-use integration with transportation investments; and strategic system expansion investments.

Preservation – Protecting our Infrastructure

The 2008 RTP proposes setting aside substantial funding for infrastructure preservation. However, there remains a substantial shortfall in funding the \$40 billion in needs.

Operational Strategies – Getting the Most Out of Our Existing System

The Highways and Arterials Supplemental Report of the 2008 RTP proposes funding for operational strategies that can improve the productivity of the Regional Highway System through 2035. The total amount of funding for these improvements represents less than one percent of the overall RTP expenditures, but the benefits, when compared to the costs, are expected to be significant.

Transportation Demand Management (TDM)

The 2008 RTP includes \$1.25 billion in TDM investments through 2030, with over \$900 million dedicated to non-motorized transportation improvements.

Strategic System Expansion/Capital Investments

SCAGs transportation plan proposes a balanced investment in all of the Region's travel modes so that the system performs at the highest level possible.

For example, the 2008 RTP includes a Strategic Arterial Improvement concept that could involve a combination of road widening, signal prioritization and other Intelligent Transportation Systems (ITS) deployment as well as, grade separation at critically high-volume intersections to enhance the flow speed and capacity of the arterial system. In addition to the specific arterial improvements identified under the Smart Street Improvement Program, this Plan proposes a significant increase in funding for arterial improvements and capacity enhancements.

Strategic Growth Linked to Transportation

The 2008 RTP will continue to promote voluntary land use policies that are demonstrated to be both regionally beneficial relative to their performance in the regional transportation system and reflective of emerging public policy, development patterns, and community needs throughout the region.

These policies and strategies were founded on the principles developed through the regional growth visioning efforts begun in 2001. Policies/strategies will include the following ³:

- Identify regional strategic areas for infill and investment.
- Structure the plan on a 3-tiered system of centers development.
- Develop “complete communities” through a concentration of activities with housing, employment, and a mix of retail and services, located in close proximity to each other.
- Develop nodes (that are people-scaled, walkable communities) on a corridor.
- Plan for additional housing and jobs near transit.
- Plan for a changing demand in types of housing (due to shifts in the labor force).
- Continue to protect stable existing single family areas.
- Ensure adequate access to open space and preservation of habitat.
- Integrate land use to decentralized regional aviation strategy and job creation.
- Incorporate local input and feedback on future growth.

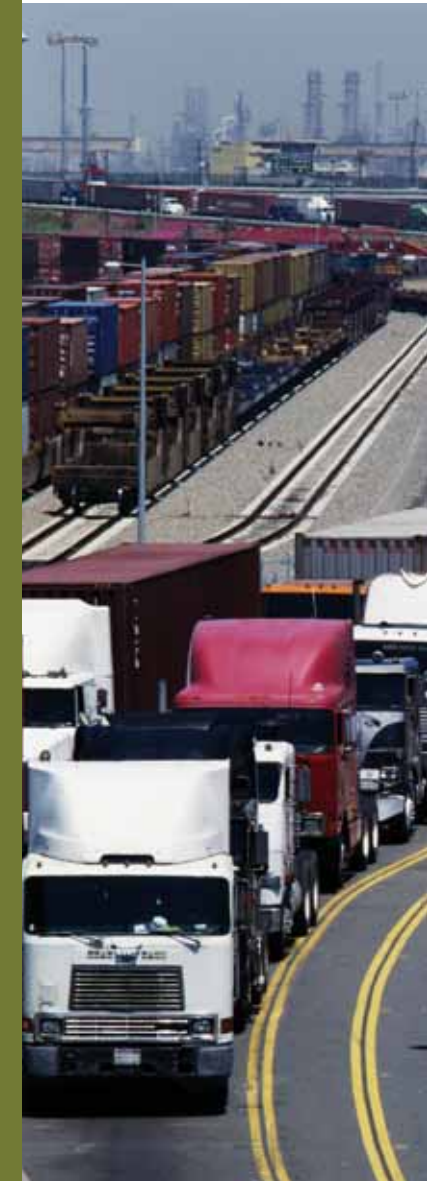
In addition, there are emerging planning practices that link transportation with efficient land use planning.

Examples of such planning practices include the twin concepts of Complete Streets and Green Streets. In conventional transportation planning, many streets are designed solely for the automobile. They lack adequate sidewalks to support wheelchairs; are not wide enough to support bicycle lanes or transit riders; and, in some cases, simply lack sidewalks. These “incomplete streets” serve as a disincentive for other modes of transportation besides the automobile. By incorporating transportation and land use improvements that provide incentives for alternatives to the automobile, the efficiency of the system can be increased. These “complete streets” are designed and operated to enable safe, attractive, and comfortable access and travel for all users, regardless of mode.

The complementary concept of Green Streets incorporates the use of trees, plantings and other “greening” techniques that can provide a sense of “public space” encouraging bicycle and pedestrian travel. Green Streets can also reduce the urban heat sink effect, help manage stormwater runoff by filtering the water through vegetation, and provide positive psychological benefits to local residents.

Goods Movement Strategies

Our region needs to do more now to plan for the unprecedented growth in future cargo volumes and their impacts on our air and surface transportation system. To that end, the San Pedro Bay ports are planning and developing programs to increase capacity and enhance operational efficiency in the handling of



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Public Health: Reducing and eliminating passenger and freight-related vehicle travel and congestion will reduce adverse health impacts from transportation-related air pollution. For example, living near heavy traffic nearly triples the chance of emergency room visits or hospitalizations for asthma sufferers.

Environmental Justice: Developing an effective long-term transportation system must avoid, minimize, or mitigate disproportionately adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations. It must also ensure full and fair participation by all affected communities in the transportation decision-making process.

Climate Change: Policies that encourage and expand public transit will reduce passenger vehicle use and subsequently reduce greenhouse gas emissions.

The increased use of market-based incentives should be considered

cargo, while minimizing the impacts of port goods movement activity on the environment and public health. Some of these strategies that will play a key role in allowing the ports to realize their full potential in supporting the growth in cargo include the following:

- On-dock Rail Capacity Enhancements,
- PierPass Off-peak Program,
- Virtual Container Yards, and
- Port Clean Air Action Plan Strategies

Looking beyond the Ports to the freight distribution network, the RTP will include strategies to facilitate truck movement including:

- Truck Climbing Lanes,
- Dedicated Truck Lanes, and
- Truck Emission Control Strategies

SCAG's 2008 RTP also proposes rail system capacity enhancements that reduce truck traffic, including, rail grade separations, and improve freight mobility, and exploring alternatives to reduce rail emissions. These strategies include:

- Near Dock Intermodal Yard Capacity Enhancements,
- Rail Mainline Capacity Improvements,

- Rail Grade Separations,
- On-dock Rail Projects,
- HSRT Freight Corridor, and
- Locomotive Engine Upgrades

Finally, Inland Ports and related initiatives have been proposed to reduce truck vehicle miles traveled (VMT), decrease congestion, and lower emissions. The broad potential benefits of an inland port include facilitating goods movement, encouraging economic development, reducing traffic congestion, and promoting the regional objectives.

High Speed Rail Transport System (HSRT)

The HSRT system comprises a long-term vision connecting the region's ports, airports, and urban activity centers. The system can be constructed in multiple stages that can each be financially viable. The financial performance will be enhanced as the system is extended in connectivity throughout the region and the volume of users increases.

Aviation

SCAG's Regional Aviation Strategy would accommodate a total regional passenger aviation demand of 170 million annual passengers (MAP). Under the Strategy, rather than relying on expanding existing urban airports, the future demand for

as a way to mitigate traffic volumes on existing roadways.

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air travel will be largely served by using available capacity at airfields located in the Inland Empire and north Los Angeles County where projected population growth will be best served. This plan calls for constraining the LAX to its estimated existing physical capacity of 78 MAP, increasing the Ontario International Airport to 30 MAP, and the development of a new passenger airport at Palmdale that will accommodate 12.8 MAP.

Cooperation between airport authorities is necessary to ensure efficient usage of capacity. Cooperation between airports would be accomplished through the integration of airport master plans, and the development of memoranda of understanding and contractual agreements between airports. These agreements would also identify complementary roles and market niches between airports to increase synergy in the system and maximize utilization of available airport capacities throughout the region. For example, Los Angeles World Airports would play a key role in integrating master plans for the three airports it operates, namely LAX, Ontario and Palmdale.

Airport Ground Access

SCAG's Regional Aviation Strategy will have localized ground access impacts at a number of airports. Particularly, the Regional Aviation Strategy will result in dramatic increases in airport activities (people as well as cargo) at Ontario, Palmdale and a number of other airports. A number of freeway and arterial improvements and transit strategies are proposed in

SCAG's 2008 RTP to address the ground access issues as part of the overall transportation investment in the region.

The Regional Aviation Strategy was developed as part of the regional transportation planning process and was adopted as part of the 2008 RTP.

Beyond the RTP

Beyond the constraints of the RTP, more should be done to reduce VMT, congestion and improve air quality. Any new strategies will likely call for collaboration and cooperation with local, state and federal governments. Public-private partnerships will also need to be explored to tap into new resources for investment.

One example of public-private partnerships may be the implementation of market-based incentives, such as (but not limited to) High Occupancy Toll Lanes or congestion pricing. These strategies offer promise in mitigating traffic volumes on existing roadways and managing future travel on new facilities. The ability of market based incentives to achieve transportation goals and improve air quality should be maximized while addressing potential economic and social concerns.

The RCP's strategic initiatives reflect broad categories of best practices that could be used to help create a more efficient transportation system. Many of these ideas can be found in the strategic plan for the 2008 RTP which was adopted on May 8, 2008.

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EMERGING PLANNING PRACTICES - GREEN STREETS

The Oros Green Street Project located at the Los Angeles River in Elysian Valley is the first “Green Streets” project in Los Angeles. It is an eco-friendly and innovative model of sustainability that provides a pleasant, pedestrian pathway while managing and cleansing storm and dry weather runoff and pollutants that traditionally went directly to the stormwater system (and the Los Angeles River).

The project was designed to capture stormwater runoff from private homes and a residential street and clean it through a series of soil filtration and vegetative bioretention treatments before it ever gets into the Los Angeles River. The Oros Green Street Project simultaneously improved and beautified the neighborhood by adding both new infrastructure and greenscape.

source: northeasttrees.org

TRANSPORTATION GOALS

- A more efficient transportation system that reduces and better manages vehicle activity.
- A cleaner transportation system that minimizes air quality impacts and is energy efficient.

TRANSPORTATION OUTCOMES

- Reduce the region’s vehicle miles traveled from all vehicles and from carbon-based fueled vehicles to 1990 levels by 2020.
- Reduce the region’s use of gasoline and diesel fuel from on-road vehicles to 1990 levels by 2020, including accelerating the penetration of vehicles fueled by fuel cells or other non-petroleum based engine technologies.

TRANSPORTATION ACTION PLAN

Best Practices	Legislation	Coordination	Constrained Policies	Potential for Direct/Indirect Benefits								Other Benefits	
				Land Use	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change
SCAG Best Practices													
		X	TR-1 SCAG should ensure that transportation investments are based on SCAG's adopted Regional Performance Indicators.	X	X		X		X	X		X	X
		X	TR-2 SCAG should ensure safety, adequate maintenance, and efficiency of operations on the existing multi-modal transportation system that should be RTP priorities and should be balanced against the need for system expansion investments.	X	X		X		X			X	X
		X	TR-3 SCAG should develop a collaborative implementation program that identifies required actions and policies for RTP land use and growth strategies that differ from expected trends.	X	X		X	X	X		X	X	X
		X	TR-4 SCAG should support and encourage High Occupancy Vehicle gap closures that significantly increase transit and rideshare usage.		X		X					X	X
		X	TR-5 SCAG should monitor progress of the RTP, including timely implementation of projects, programs, and strategies.									X	
		X	TR-6 SCAG should address SAFETEA-LU requirements that call for improved safety planning and consultation with environmental and natural resource stakeholders when considering transportation funding plans, programs, and projects.	X	X	X	X	X	X	X	X	X	X

TRANSPORTATION

Best Practices	Legislation	Coordination	Strategic Initiatives	Potential for Direct/Indirect Benefits								Other Benefits	
				Land Use	Air Quality	Water	Energy	Open Space	Economy	Security	Solid Waste	Public Health	Climate Change
SCAG Initiatives													
X		X	TR-1S SCAG, transportation commissions, local governments, and other project proponents should consider using the Compass Blueprint ⁴ to influence the funding of future transportation planning and investments.	X	X		X	X	X			X	X
X		X	TR-2S SCAG should help coordinate regional, State, and federal consensus on how to address the additional strategic investments and technological breakthroughs necessary to meet mobility and air quality goals.	X	X		X		X		X	X	X
X	X	X	TR-3S Beyond the RTP, SCAG should study the effectiveness of market based incentives and disincentives that can be used separately or in conjunction with each other in order to reduce VMT.		X		X	X	X			X	X

Footnotes

- ¹ Regional Transportation Plan (RTP) - The Southern California Association of Governments' 2008 Regional Transportation Plan (RTP) is a 30-year plan that provides a vision for transportation investments in the SCAG region using an assessment of growth and economic trends over the next two decades.
- ² Twenty-foot Equivalent Units (TEUs) - A Twenty Foot Unit is a measurement based on a 20 foot container commonly connected to a commercial vehicle. It is the standard unit for describing a ship's cargo carrying capacity, or a shipping terminal's cargo handling capacity. A standard forty-foot (40x8x8 feet) container equals two TEUs (each 20x8x8 feet).
- ³ A more detailed description of these strategies and policies can be found on pages 90-92 of SCAG's 2008 Regional Transportation Plan, adopted May 2008.
- ⁴ SCAG's Compass Blueprint are a set of advisory land use policies and strategies for future regional planning efforts and seeks to integrate land use and transportation with the goal of accommodating future growth while improving mobility for all residents; fostering livability in all communities; enabling prosperity for all people; and promoting sustainability for future generations.

